AIR INFILTRATION SEALING – FRAMING STAGE FOR BATT, LOOSE FILL, AND SPF

CERTIFICATE OF VERIFICATION		CF3R-ENV-21-H
Quality Insulation Installation (QII) –Air Infiltration Sealing - Framing Stage for Batt, Loose Fill, and SPF		(Page 1 of 5)
Project Name:	Enforcement Agency:	Permit Number:
Dwelling Address:	City:	Zip Code:

A. Air Infiltration and Insulation Installation (QII) – Framing Stage		
01	The requirements below cover the required air sealing and installation of insulation that must occur in the framing stage.	
02	An air barrier is required in all thermal envelope assemblies to limit air movement between unconditioned/outside spaces and conditioned/inside spaces and must meet one of the following: 1. Using individual materials that have an air permeance not exceeding 0.004 cfm/ft^2 under pressure differential of 0.3 in w.g. (1.57 psf) (0.02 L/s.m^2 at 75 pa) when tested in accordance with ASTM E2178; or • A list of example materials meeting the air permeance testing performance levels of 1 above is available in RA3.5.2. 2. Using assemblies of materials and components that have an average air leakage not to exceed 0.04 cfm/ft^2 under a pressure differential of 0.3 in w.g. (1.57 psf) (0.2 L/s.m^2 at 75 pa) when tested in accordance with ASTM E2357, ASTM E1677, ASTM E1680 or ASTM E283; or 3. Testing the complete building and demonstrating that the air leakage rate of the building envelope does not exceed 0.4 cfm/ft^2 at a pressure differential of 0.3 in w.g. (1.57 psf) (2.0 L/s.m^2 at 75 pa) in accordance with ASTM E779 or an equivalent approved method.	
03	Air Barrier Material Installed	
04	Verification Status:	☐ Pass - all applicable requirements are met; or ☐ Fail - one or more applicable requirements are not met. Enter reason for failure in corrections notes field below; or ☐ All N/A - This entire table is not applicable.
05	Correction Notes:	
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met unless otherwise noted in the Verification Status and the Corrections Notes in this table.		

B. Raised Floor Air Barrier		
01	All gaps in the raised floor are sealed.	
02	All chases sealed at floor level using a hard cover and the hard cover is sealed.	
03	All plumbing and electrical wires that penetrate the floor are sealed.	
04	Subfloor sheathing is glued or sealed at all exterior panel edges to create a continuous air tight subfloor.	
05	Verification Status:	☐ Pass - all applicable requirements are met; or ☐ Fail - one or more applicable requirements are not met. Enter reason for failure in corrections notes field below; or ☐ All N/A - This entire table is not applicable.
06	Correction Notes:	
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C. Walls/Knee Wall Air Barrier	
01	All penetrations through the exterior wall air barrier are sealed to provide an air-tight envelope to unconditioned spaces such as the outdoors, attic, garage, and crawl space.
02	Exterior wall air barrier is sealed to the top plate and bottom plate in each stud bay.
03	All electrical boxes including knockouts that penetrate the air barrier to unconditioned space are sealed.
04	All openings in the top and bottom plate, including all interior and exterior walls, to unconditioned space are sealed; such as holes drilled for electrical and plumbing.
05	Exterior bottom plates (all stories) are sealed to the floor using the appropriate sealing method.
06	All gaps around windows and doors are sealed. The sealant used follows window manufacturer specifications.
07	Rim joists gaps/openings are fully sealed.
08	Fan exhaust ducts that run between conditioned floors to exterior walls including damper at the exterior wall.
09	Metal tie downs are insulated between exterior framing and tie down.
10	Hard to access wall stud cavities, such as corner channels or wall intersections, are insulated to the proper R-value prior to the installation of exterior sheathing or exterior stucco lath.
11	Insulation is installed behind tub, shower, or fireplace enclosures, and exterior stairwells to the R-value listed on the CF1R when located against exterior walls. Insulation is installed before tub, shower, and fireplace are installed.
12	A solid air barrier is installed, from floor to ceiling, on the inside of exterior walls directly adjacent to tub, shower, or fireplace enclosures. Insulation shall contact all six sides of the air barrier on exterior walls.
13	All single-member window and door headers shall be insulated to a minimum of R-3 for a 2x4 framing, or equivalent width, and a minimum

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	of R-5 for all other assemblies. Insulation is to be placed between the interior face of the header and inside surface of the interior wall finish.	
14	Knee walls have solid and sealed blocking at the bottom, top, left and right sides.	
15	Verification Status:	☐ Pass - all applicable requirements are met; or ☐ Fail - one or more applicable requirements are not met. Enter reason for failure in corrections notes field below; or ☐ All N/A - This entire table is not applicable.
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D. Ceiling/Attic Air Barrier		
01	For vented attics much of the ceiling air barrier is verified after the ceiling drywall is installed using the ENV-22.	
02	For unvented attics ensure all penetrations through the roof deck and gable ends are sealed and airtight.	
03	All eave/soffits vents are covered with a rigid ventilation baffle that maintains the net free ventilation area.	
04	All dropped ceilings are covered with hard covers and sealed to framing.	
05	All chases are covered with hard covers and sealed to framing.	
06	Where HVAC ducts travel down a chase, the chase is sealed at the ceiling level.	
07	Chimneys and flues require sheet metal flashing. The flashing shall be sealed to the chimney/flue with fire rated caulk. The flashing shall be sealed to the surrounding framing.	
08	All eave/soffit baffles are installed to stop air movement around the baffle and into insulation. Net free-ventilation of the eave/soffit shall be maintained.	
09	Double walls that open to the attic are covered with an air barrier and cover has an air tight seal to the framing.	
10	Verification Status:	☐ Pass - all applicable requirements are met; or ☐ Fail - one or more applicable requirements are not met. Enter reason for failure in corrections notes field below; or ☐ All N/A - This entire table is not applicable.
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E. Conditioned Space Above or Adjacent to Garage Air Barrier		
01	All penetrations in the subfloor above the garage into conditioned space must follow the raised floor air barrier requirements above.	
02	Infiltration between the space above the garage and subfloor is prevented by one of the following methods: • Seal all edges of the garage ceiling (typically drywall) at the perimeter of the garage to create a continuous air tight surface between the garage and adjacent conditioned envelope. Seal all plumbing, electrical, and mechanical penetrations between the garage and adjacent conditioned space. For an open-web truss, airtight blocking is added on four sides of the garage perimeter. Insulation can be placed on the garage ceiling. • Seal the band joist above the wall at the garage to conditioned space transition. Seal all subfloor seams and penetrations between the garage and adjacent conditioned space. Insulation must be placed in contact with the subfloor below the conditioned space.	
03	Verification Status:	☐ Pass - all applicable requirements are met; or ☐ Fail - one or more applicable requirements are not met. Enter reason for failure in corrections notes field below; or ☐ All N/A - This entire table is not applicable.
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F. Walls for Attached Porch, Attic, Double Wall Air Barrier		
01	All walls that separate conditioned and unconditioned space include a continuous air barrier on the interior and exterior wall.	
02	An exterior wall air barrier is required at the intersection of the porch and exterior wall when there is conditioned space on the other side. The exterior wall includes an air barrier where the attic attaches to the conditioned space.	
03	Truss framing blocking is used at the top and bottom of each wall/roof section.	
04	Verification Status:	☐ Pass - all applicable requirements are met; or

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		☐ Fail - one or more applicable requirements are not met. Enter reason for failure in corrections notes field below; or ☐ All N/A - This entire table is not applicable.
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G. Cantilevered Floor Air Barrier		
01	Airtight blocking is installed between joists where the wall rim joist would have been located in the absence of a cantilever.	
02	Exterior sheathing is installed to the bottom of the cantilever so that there is a continuous air and weather barrier for the cantilever. The cantilevered joist must be insulated to the same R-value as would be required for the subfloor prior to closing.	
03	Any gaps, cracks or penetrations in the air barrier of the cantilever are sealed. Can lights in the cantilever are IC and AT rated and properly sealed to sheathing.	
04	Verification Status:	☐ Pass - all applicable requirements are met; or ☐ Fail - one or more applicable requirements are not met. Enter reason for failure in corrections notes field below; or ☐ All N/A - This entire table is not applicable.
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H. Multifamily Air Barrier		
01	Multifamily buildings must meet all air sealing requirements for single family buildings listed above.	
02	Each dwelling unit must be air sealed to stop air movement from one unit to another.	
03	Floor AND Ceiling of each dwelling unit – all penetrations through the floor and ceiling of each unit are sealed, including electric and gas utilities, water pipes, drain pipes, fire protection service pipes, and communication wiring.	
04	Elevator penthouse, mechanical penthouse, stairwell doors, roof access hatch, and plumbing stacks are all sealed to reduce air transfer from attached spaces.	
05	Common Walls – the bottom plate between units is sealed to the subfloor. All penetrations in the common walls are sealed, including electrical boxes, wiring, and plumbing penetrations. Perpendicular interior walls that open into the common walls are sealed.	
06	Vertical Chases for garbage chutes, elevator shafts, and HVAC ducting plumbing must be sealed to the floor and ceiling of each unit to stop air movement up and around the chase due to stack effect.	
07	Vertical chases such as garbage chutes, elevator shafts, HVAC ducting, plumbing, wiring, etc. must be sealed to stop air movement through the chase to the surrounding spaces.	
08	Common hallways – penetrations between dwelling units and common hallways are sealed, including doors to dwelling units which shall be gasketed or made substantially airtight.	
09	Verification Status:	☐ Pass - all applicable requirements are met; or ☐ Fail - one or more applicable requirements are not met. Enter reason for failure in corrections notes field below; or ☐ All N/A - This entire table is not applicable.
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I. Determination of HERS Verification Compliance	
All applicable sections of this document shall indicate compliance with the specified verification protocol requirements in order for this Certificate of Verification as a whole to be determined to be in compliance.	
01	

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Verification documentation is accurate and complete.	
Documentation Author Name:	Documentation Author Signature:
Company:	Date Signed:
Address:	CEA/HERS Certification Information (if applicable):
City/State/Zip:	Phone:

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Verification is true and correct.
2. I am the certified HERS Rater who performed the verification identified and reported on this Certificate of Verification (responsible rater).
3. The installed features, materials, components, manufactured devices, or system performance diagnostic results that require HERS verification identified on this Certificate of Verification comply with the applicable requirements in Reference Appendices RA2, RA3, and the requirements specified on the Certificate of Compliance for the building approved by the enforcement agency.
4. The information reported on applicable sections of the Certificate(s) of Installation (CF2R) signed and submitted by the person(s) responsible for the construction or installation conforms to the requirements specified on the Certificate(s) of Compliance (CF1R) approved by the enforcement agency.
5. I will ensure that a registered copy of this Certificate of Verification shall be posted, or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a registered copy of this Certificate of Verification is required to be included with the documentation the builder provides to the building owner at occupancy.

BUILDER OR INSTALLER INFORMATION AS SHOWN ON THE CERTIFICATE OF INSTALLATION	
Company Name (Installing Subcontractor, General Contractor, or Builder/Owner):	
Responsible Builder or Installer Name:	CSLB License:
HERS PROVIDER DATA REGISTRY INFORMATION	
Sample Group Number (if applicable):	Dwelling Test Status in Sample Group (if applicable):
HERS RATER INFORMATION	
HERS Rater Company Name:	
Responsible Rater Name:	Responsible Rater Signature:
Responsible Rater Certification Number w/ this HERS Provider:	Date Signed:

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CF2R-ENV21-H User Instructions

A. Air Infiltration and Insulation Installation (QII) – Framing Stage

3. HERS Rater to select from list:
   a. Pass - all applicable requirements are met.
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   c. All N/A - This entire table is not applicable.
4. Correction Notes, Rater must enter reason for failure.

B. Raised Floor Air Barrier

5. HERS Rater to select from list:
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C. Walls/Knee Wall Air Barrier

15. HERS Rater to select from list:
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16. Correction Notes, Rater must enter reason for failure.

D. Ceiling/Attic Air Barrier

10. HERS Rater to select from list:
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E. Conditioned Space Above or Adjacent to Garage Air Barrier

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F. Walls for Attached Porch, Attic, Double Wall Air Barrier

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G. Cantilevered Floor Air Barrier

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H. Multifamily Air Barrier

9. HERS Rater to select from list:
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   b. Fail - one or more applicable requirements are not met. Rater must enter reason for failure in corrections notes field below.
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